

<b>HYDROMODIFICATION</b>				
<i>Eugene Matzat, Purdue CES, Section Moderator</i>				
<b>Objectives</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Protect and restore in-stream and riparian habitats (channels)	Increase in high quality in-stream and riparian habitats and biodiversity.	Funds, technical assistance, education, and monitoring	IDEM, IDNR, US Army Corps of Engineers, US Fish & Wildlife	1-5 years
Reduce erosion, and sediment and chemical pollutant loading	Reduced rates of erosion and sediment and chemical pollutants	Funds, technical assistance, education, and monitoring	IDEM, IDNR, US Army Corps of Engineers, Drainage Boards, USDA-NRCS	5-10 years
Minimize the negative physical and chemical impacts of channelization (surface waters)	Fishable, swimmable, drinkable surface waters.	Funds, technical assistance, education, and monitoring	IDEM, IDNR, US Army Corps of Engineers, Drainage Boards	10-15 years

*(Hydromodification actions determined at December 15, 2003 public meeting.)*

<b>Objective:</b> Protect and restore in-stream and riparian habitats (channels)				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Develop additional diagnostic studies for streams	Identification of water quality status for streams	US EPA 319 NPS; additional staff	IDEM; EPA	1-5 years
Develop additional diagnostic studies for streams	Identification of water quality status for streams	Lake & River Enhancement (LARE)	IDNR-DOSC	1-5 years
Develop additional diagnostic studies for streams	Identification of water quality status for streams	Hoosier River Watch Program	IDNR-DOSC; Purdue University	1-5 years
Establish in-stream habitats	Improved aquatic habitat for invertebrates	Technical assistance; cost-share	IDNR-F&W; US Fish & Wildlife; County Drainage Boards	5-10 years
Establish/maintain riparian buffers and filter strips	Reduced sedimentation, chemicals, organics and temperature (sunlight)	Technical assistance; cost-share programs; education	IDNR-DOSC; USDA-NRCS; County Drainage Boards; County Surveyors	5-10 years
Reduce/eliminate non-native species	Restoration of native species	Staff for species removal; additional funding	IDNR; US Fish & Wildlife; US Army Corps of Engineers	5-10 years
Encourage establishment of additional riparian areas	Reduced sedimentation; additional riparian areas and buffers	Technical assistance; cost-share	IDNR-DOSC; IDNR-F&W; IDNR-DOF; USDA-NRCS; US Fish & Wildlife	10-15 years
Remove unneeded dams and man-made obstructions where feasible	Removal of unneeded structures; less sedimentation; improved fish species migration	Dam and structure evaluations; technical assistance (with removals)	IDNR-F&W; IDNR-DOW; US Fish & Wildlife	10-15 years

<b>Objective:</b> Reduce erosion, and sediment and chemical pollutant loading				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Enforce existing highway and urban erosion control regulations	Reduced sedimentation and chemical run-off from highway and urban sources	On-site inspectors for improved enforcement	IDNR-DOSC; INDOT; IDEM; Federal Highway Administration	1-5 years
Stabilize stream and channel banks	Reduced sediment loads and improved technical specifications for County Drainage Boards	Technical assistance; cost-share	IDNR-DOSC (LARE); USDA-NRCS; County Drainage Boards; US Army Corps of Engineers (Section 14)	1-5 years
Demonstrate restoration of stream and channel meanders (restoration of original stream and channel courses)	Reduced stream flow and resultant erosion; reduced water temperatures; improved aquatic habitat	Technical assistance; educational assistance; cost-share	IDNR-DOW; IDNR-F&W; US EPA 319 NPS; US Fish & Wildlife; US Army Corps of Engineers	5-10 years

<b>Objective:</b> Minimize the negative physical and chemical impacts of channelization (surface waters)				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Stabilize stream and channel banks	Reduced sediment loads and improved technical specifications for County Drainage Boards	Technical assistance; cost-share	IDNR-DOSC (LARE); USDA-NRCS; County Drainage Boards; US Army Corps of Engineers (Section 14)	1-5 years
Demonstrate restoration of stream and channel meanders (restoration of original stream and channel courses)	Reduced stream flow and resultant erosion; reduced water temperatures; improved aquatic habitat	Technical assistance; educational assistance; cost-share	IDNR-DOW; IDNR-F&W; US EPA 319 NPS; US Fish & Wildlife; US Army Corps of Engineers	5-10 years
Encourage establishment of additional riparian areas	Reduced sedimentation; additional riparian areas and buffers	Technical assistance; cost-share	IDNR-DOSC; IDNR-F&W; IDNR-DOF; USDA-NRCS; US Fish & Wildlife	10-15 years

<b>WETLANDS and RIPARIAN AREAS</b>				
<i>Kenneth Eck, Purdue CES, Section Moderator</i>				
<b>Objectives</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Protect wetlands and riparian areas in Coastal Zone.	No net loss of wetlands and riparian areas	Funds, technical assistance, educational	IDNR; IDEM; US Army Corps of Engineers; US Fish & Wildlife; USDA-NRCS	1-5 years
Restore and enhance wetlands and riparian areas in Coastal Zone	Increase in quantity and quality of wetlands and riparian areas	Funds, technical assistance, educational assistance	IDNR; IDEM; US Army Corps of Engineers; US Fish & Wildlife; USDA-NRCS	1-5 years
Explore applications for use of vegetated treatment systems	Increased use and decreased cost of vegetated treatment systems	Educational assistance, policy changes for select systems, funds for demonstrations	IDEM; IDNR; Ind. State Board of Health; USDA-NRCS; USDA-RD	5 -15 years

*(Wetlands and Riparian Areas actions determined at January 20, 2004 public meeting.)*

<b>Objective:</b> Protect wetlands and riparian areas in Coastal Zone.				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Enforce existing legislation related to wetlands and riparian areas protection	No net loss of wetlands and riparian areas or quality	Increased monitoring of wetlands and riparian areas	IDNR; IDEM; USDA (Farm Bill, Swamp Buster)	1-5 years
Develop and promote educational programs targeting wetlands and riparian areas benefits and protection	No net loss of wetlands and riparian areas or quality	Educational assistance	IDNR; Purdue CES; USDA-NRCS	1-5 years
Maintain Indiana wetlands website and newsletter	No net loss of wetlands and riparian areas or quality	Educational assistance	IDNR-DOSC; Office of the Commissioner of Agriculture; IDEM	1-5 years
Expand “legacy”-type State easement programs to preserve wetlands and riparian areas	No net loss of wetlands and riparian areas or quality	Funding, technical assistance	IDNR	1-5 years
Fully implement the <i>Indiana Wetlands Conservation Plan</i>	No net loss of wetlands and riparian areas or quality	Funding, technical assistance; educational assistance	IDNR	5-10 years

<b>Objective:</b> Restore and enhance wetlands and riparian areas in Coastal Zone.				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Develop and promote educational programs targeting wetlands and riparian areas benefits and restoration	Increase in quantity and quality of wetlands and riparian areas	Educational assistance	IDNR; Purdue CES; USDA-NRCS	1-5 years
Maintain Indiana wetlands website and newsletter	Increase in quantity and quality of wetlands and riparian areas	Educational assistance	IDNR-DOSC; Office of the Commissioner of Agriculture; IDEM	1-5 years
Expand “legacy”-type State easement programs to restore and expand wetlands and riparian areas	Increase in quantity and quality of wetlands and riparian areas	Funding, technical assistance	IDNR	1-5 years
Fully implement the <i>Indiana Wetlands Conservation Plan</i>	Increase in quantity and quality of wetlands and riparian areas	Funding; technical assistance; educational assistance	IDNR	5-10 years
Provide technical assistance in restoring and enhancing wetlands and riparian areas	Increase in quantity and quality of wetlands and riparian areas	Technical assistance	IDNR; USDA-NRCS; US F&W; US-ACE	5-15 years
Increase public knowledge of existing financial programs for restoring and enhancing wetlands and riparian areas	Increase in quantity and quality of wetlands and riparian areas	Funding; educational assistance	IDNR; IDEM; USDA-NRCS; US F&W	5-15 years
Create additional financial programs for restoring and enhancing wetlands and riparian areas	Increase in quantity and quality of wetlands and riparian areas	Funding; educational assistance	IDNR; IDEM; USDA-NRCS; US F&W	5-15 years

<b>Objective:</b> Explore applications for use of vegetated treatment systems.				
<b>Actions</b>	<b>Measures of Success</b>	<b>Resources Needed</b>	<b>Agencies</b>	<b>Time</b>
Encourage establishment of additional buffer areas and vegetated filter strips	Increase in wetlands and riparian areas quality; reduced sediment, chemicals and organics in surface waters; acres of additional buffer areas	Technical assistance; educational assistance; cost-share	IDNR-DOSC; IDNR-F&W; IDNR-DOF; USDA-NRCS; US Fish & Wildlife; County Drainage Boards; County Surveyors	5-15 years
Encourage establishment of additional constructed wetlands	Increase in wetlands and riparian areas quality; reduced sediment, chemicals and organics in surface waters; number of constructed wetlands	Technical assistance; educational assistance; cost-share	IDNR-DOSC; IDNR-F&W; IDNR-DOF; USDA-NRCS; US Fish & Wildlife	5-15 years

***Additional concerns of Hydromodification and Wetlands & Riparian Areas Group:***

- 1.) Urban Issue: Need for more pervious parking areas with block and grass areas
- 2.) Concern over beaver dams and drainage